Claim listing

1. A compound according to Formula 1

Formula 1

- in which Z is selected from the group consisting of an alkyl, an O-alkyl, an alkenyl, an alkynyl, and CN, wherein the alkyl, the alkenyl, or the alkynyl is optionally substituted with a halogen or OH;
- A is CH or N, and E is C-R₆ or N, such that (1) when A is CH then E is C-R₆ or N, and (2) when A is N then E is CH;
- X is NR_1R_2 , $NR_2NR_3R_4$, $NR_2N=NR_3$, $NR_2N=CHR_3$, $NR_2N=O$, $NR_2C(=O)NR_3R_4$, $NR_2C(=S)NR_3R_4$, $NR_2C(=NH)NR_3R_4$, $NR_1C(=O)NR_2NR_3R_4$, NR_2OR_3 , ONHC(O)O-alkyl, ONHC(O)O-aryl, ONR_3R_4 , SNR_1R_2 , $SONR_1R_2$, or $S(O)_2NR_1R_2$;
- wherein R₁, R₂, R₃, and R₄ are independently H, alkyl, substituted alkyl, O-alkyl, cyclic alkyl, heterocyclic alkyl, alkoxy, alkaryl, aryl, heterocyclic aryl, substituted aryl, acyl, substituted acyl, S(O)₂-alkyl, NO, NH₂, or OH; and
- R₆ is H, NH₂, halogen, N₃, NHR₁, NHCOR₁, NR₁R₂, NHSO₂R₁, NHCONHR₁,

 NHCSNHR₁, CH₂NHR₁, CHR₁NHR₂, NHNH₂, CN, alkyl, alkenyl, alkynyl,

 CH₂-aryl, CH₂-heterocycle, halogen, OH, or SH; and
- wherein combination of the radicals A, E, X, and Z confer antiviral activity against HCV to the compound.

- 2. The compound of claim 1 wherein A and E are CH, Z is CH₃ and wherein X is NR₁R₂.
- 3. The compound of claim 2 wherein R₁ is CH₃, NH₂, or H, and wherein R₂ is CH₂CH₂OH, CH₂CH₂NH₂, OCH₃, CH₃, or OH.
- 4. The compound of claim 1 wherein A and E are CH, Z is CH₃ and wherein X is NHNR₃R₄.
- 5. The compound of claim 4 wherein R₃ is H, or CH₃, and wherein R₄ is H, CHO, C(O)CH₃, C(O)OCH₃, S(O)₂CH₃, or CH₃.
- 6. The compound of claim 1 wherein A and E are CH, Z is CH₃ and wherein X is ONHC(O)O-alkyl or ONHC(O)O-alkaryl.
- 7. The compound of claim 6 wherein ONHC(O)O-alkyl is ONHC(O)OC(CH₃)₃, and wherein ONHC(O)O-alkaryl is ONHC(O)O-CH₂-phenyl.
- 8. The compound of claim 1 further comprising a moiety covalently coupled to at least one of the C2'-atom, C3'-atom, and C5'-atom, thereby replacing the OH group at the at least one of the C2'-atom, C3'-atom, and C5'-atom, and wherein at least part of the moiety is preferentially cleaved from the compound in a target cell or target organ.
- 9. The compound of claim 8 wherein the moiety comprises a cyclic phosphate, a cyclic phosphonate, or a cyclic phosphoramidate.
- The compound of claim 8 wherein the moiety has a structure according to Formula M1 or Formula M2

- wherein A in M1 or M2 is O or CH₂ and replaces the 5'-OH group of the compound of Formula 1;
- B and B' are independently O or NH, and where at least one of B and B' is NH then at least one of R_1 and R_2 is an amino acid that forms a peptide bond with the N atom of the NH, respectively, and where at least one of B and B' is O then at least one of R_1 and R_2 is $CH_2CH_2SC(=O)t$ -butyl or $CH_2OC(=O)iPr$; and
- V, W, and W' are independently hydrogen, alkyl, alkenyl, alkynyl, aryl, chlorophenyl, alkaryl, each of which is optionally substituted, and Z is hydrogen, CHWOH, CHWOCOW', SW, or CH₂aryl.
- 11. The compound of claim 1 further comprising a phosphate group covalently coupled to the C5'-OH group to form a phosphate ester.
- 12-31 (canceled).